

**Notice of Allowability**

Application No.

10/660,001

Examiner

Boris Benenson

Applicant(s)

GORCZYCA ET AL.

Art Unit

2836

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/11/2003.
2. ☒ The allowed claim(s) is/are 1-12.
3. ☒ The drawings filed on 09/11/2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).  
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>01.14.2004</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                                 | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other _____   |

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***Detailed Actions***

***Allowable Subject Matter***

1. Claims 1-12 are allowed.

**The following is an examiner's statement of reasons for allowance:**

2. Independent Claims 1 and 7 are allowable because none of the prior art of record disclose a bipolar ionization apparatus or method for controlling an ionization system comprising controller that *controls a duty cycle* of outputs of the positive and negative high voltage power supplies to achieve a desired offset voltage by causing the outputs of the positive and negative high voltage power supplies to *overlap* in combination with the other claim limitations.

3. Independent Claim 6 is allowable because none of the prior art of record disclose a bipolar ionization apparatus wherein a controller controls the outputs of the positive and negative high voltage power supplies to achieve a desired offset voltage to alternately control a positive set-point for a predetermined period of time and then to a negative set-point for another predetermined period of time while continuously outputting both positive and negative ions in combination with the other claim limitations.

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4. Claims 2-5 and 8-12 are depending on allowable Claims 1 and 7 and therefore allowable.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Related Prior Art***

6. Lau et al. (6,632,407) disclose Personal Electro-Kinetic Air Transporter-Conditioner that includes an air ionizer unit comprising a high voltage DC inverter that boosts low voltage (e.g., perhaps 6 VDC to about 12 VDC) to high voltage DC, and a generator that receives the high voltage DC and outputs high voltage pulses. Lau et al. teach that the high voltage pulses are perhaps 10 KV peak-to-peak, although an essentially 100% duty cycle (e.g., high voltage DC) output could be used instead of pulses.

7. Pitel et al (5,930,105) disclose a Method And Apparatus For Air Ionization. Pitel et al. disclosed that schemes using pulsed DC voltages of positive and negative polarity supplied to separate ionizing electrodes are also known to avoid the loss of ions back to the electrodes, both by separating the electrodes in space and operating

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only one electrode at a time, and thus improve ionization efficiency. However, such schemes are limited in pulse repetition frequency due to rise and decay times of the pulses of opposite polarity that tend to overlap at high switching rates. An overlap is considered as a negative event that diminished efficiency of the ionizer.

None of the prior art of record disclose or suggest to control a duty cycle of bipolar pulses to create an overlap in order to keep offset voltage in an ionization system at a predetermine level within some threshold critical for the success of their particular process or processes.

***Contact information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris Benenson whose telephone number is (571) 272-2048. The examiner can normally be reached on M-F (8:20-6:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Boris Benenson  
Examiner  
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B.B.

*Stephen W. Jackson*  
8-23-04

STEPHEN W. JACKSON  
PRIMARY EXAMINER